

Appl. No. 10/824/898
Reply to Office action of 10-11-2005
Page 2

IN THE CLAIMS:

1. (Original) A method for controlling delivery of a therapy in an implantable medical device, comprising:
 - delivering a therapy at a first rate during a first time period;
 - monitoring a parameter in response to the therapy delivered at the first rate to generate first parameter data;
 - determining whether the therapy was delivered for a predetermined portion of the first time period;
 - delivering the therapy at a next rate during a next time period;
 - monitoring the parameter in response to the therapy delivered at the next rate to generate next parameter data;
 - determining whether the therapy was delivered for a predetermined portion of the next time period;
 - determining a metric corresponding to the first parameter data to generate a first parameter metric, and to the next parameter data to generate a next parameter metric; and
 - determining one of the first rate and the next rate as an optimal therapy delivery rate in response to the first parameter metric and the next parameter metric.
2. (Original) The method of claim 1, further comprising:
 - repeating delivery of the therapy at the first rate during the first time period in response to the therapy not being delivered for the predetermined portion of the first time period;
 - monitoring the parameter in response to the repeated delivery of the therapy at the first rate to generate updated first parameter data;
 - determining whether the repeated delivery of the therapy at the first rate was delivered for the predetermined portion of the first time period; and

Appl. No. 10/824/898
Reply to Office action of 10-11-2005
Page 3

determining a metric corresponding to the updated first parameter data to generate the first parameter metric.

3. (Original) The method of claim 2, further comprising:

repeating delivery of the therapy at the next rate during the next time period in response to the therapy not being delivered for the predetermined portion of the next time period;

monitoring the parameter in response to the repeated delivery of the therapy at the next rate to generate updated next parameter data;

determining whether the repeated delivery of the therapy at the next rate was delivered for the predetermined portion of the next time period;

determining a metric corresponding to the updated next parameter data to generate the next parameter metric.

4. (Currently Amended) The method of claim 3, ~~wherein~~ further comprising determining whether repeating delivery of the therapy at the first rate during the first time period and repeating delivery of the therapy at the next rate during the next time period have been repeated a predetermined number of times.

5. (Original) The method of claim 1, wherein the parameter corresponds to one of a number of arrhythmia events, a number of type of arrhythmia events, a hemodynamic event, and a metabolic event.

6. (Original) The method of claim 1, further comprising determining whether a predetermined number of arrhythmia events are detected during a predetermined time interval prior to delivering the therapy at the first rate.

7. (Original) The method of claim 1, further comprising:

delivering the therapy at the first rate during a second time period different from the first time period;

Appl. No. 10/824/898
Reply to Office action of 10-11-2005
Page 4

monitoring the parameter in response to the therapy delivered at the first rate during the second time period to generate second parameter data;

determining whether the therapy was delivered for a predetermined portion of the second time period;

delivering the therapy at a second next rate during a second next time period not equal to the first next time period;

monitoring the parameter in response to the therapy delivered at the second next rate to generate second next parameter data;

determining whether the therapy was delivered for a predetermined portion of the second next time period; and

determining a metric corresponding to the first parameter data and the second parameter data to generate the first parameter metric, and to the next parameter data and the second next parameter data to generate the next parameter metric.

8. (Original) The method of claim 5, wherein the first parameter data and the next parameter data correspond to a weighted count of one of the number of arrhythmia events and the number of type of arrhythmia events.

9. (Original) The method of claim 1, further comprising:

determining whether the one of the first parameter metric and the next parameter metric corresponding to the one of the first rate and the next rate determined as an optimal therapy delivery rate is less than the other of the first parameter metric and the next parameter metric by a predetermined threshold; and

setting the one of the first rate and the next rate determined as an optimal therapy delivery rate as a current therapy delivery rate only in response to the one of the first parameter metric and the next parameter metric being less than the other of the first parameter metric and the next parameter metric by the predetermined threshold.

Appl. No. 10/824/898
Reply to Office action of 10-11-2005
Page 5

10. (Currently Amended) A computer-readable medium having computer-executable instructions ~~for performing a method, comprising~~ which, when the instructions are implemented in an implantable medical device system, cause the system to:

- ~~delivering~~ deliver a therapy at a first rate during a first time period;
- ~~monitoring~~ monitor a parameter in response to the therapy delivered at the first rate to generate first parameter data;
- ~~determining~~ deliver whether the therapy was delivered for a predetermined portion of the first time period;
- ~~delivering~~ deliver the therapy at a next rate during a next time period;
- ~~monitoring~~ monitor the parameter in response to the therapy delivered at the next rate to generate next parameter data;
- ~~determining~~ determine whether the therapy was delivered for a predetermined portion of the next time period;
- ~~determining~~ determine a metric corresponding to the first parameter data to generate a first parameter metric, and to the next parameter data to generate a next parameter metric; and
- ~~determining~~ determine one of the first rate and the next rate as an optimal therapy delivery rate in response to the first parameter metric and the next parameter metric.

11. (Original) An implantable medical device, comprising:

- means for delivering a therapy at a first rate during a first time period;
- means for monitoring a parameter in response to the therapy delivered at the first rate to generate first parameter data;
- means for determining whether the therapy was delivered for a predetermined portion of the first time period;
- means for delivering the therapy at a next rate during a next time period;

Appl. No. 10/824/898
Reply to Office action of 10-11-2005
Page 6

means for monitoring the parameter in response to the therapy delivered at the next rate to generate next parameter data;

means for determining whether the therapy was delivered for a predetermined portion of the next time period;

means for determining a metric corresponding to the first parameter data to generate a first parameter metric, and to the next parameter data to generate a next parameter metric; and

means for determining one of the first rate and the next rate as an optimal therapy delivery rate in response to the first parameter metric and the next parameter metric.

12. (Original) The device of claim 11, further comprising:

means for repeating delivery of the therapy at the first rate during the first time period in response to the therapy not being delivered for the predetermined portion of the first time period;

means for monitoring the parameter in response to the repeated delivery of the therapy at the first rate to generate updated first parameter data;

means for determining whether the repeated delivery of the therapy at the first rate was delivered for the predetermined portion of the first time period; and

means for determining a metric corresponding to the updated first parameter data to generate the first parameter metric.

13. (Original) The device of claim 12, further comprising:

means for repeating delivery of the therapy at the next rate during the next time period in response to the therapy not being delivered for the predetermined portion of the next time period;

means for monitoring the parameter in response to the repeated delivery of the therapy at the next rate to generate updated next parameter data;

means for determining whether the repeated delivery of the therapy at the next rate was delivered for the predetermined portion of the next time period; and

Appl. No. 10/824/898
Reply to Office action of 10-11-2005
Page 7

means for determining a metric corresponding to the updated next parameter data to generate the next parameter metric.

14. (Currently Amended) The device of claim 13, wherein further comprising means for determining whether repeating delivery of the therapy at the first rate during the first time period and repeating delivery of the therapy at the next rate during the next time period have been repeated a predetermined number of times.

15. (Original) The device of claim 11, wherein the parameter corresponds to one of a number of arrhythmia events, a number of type of arrhythmia events, a hemodynamic event, and a metabolic event.

16. (Original) The device of claim 11, further comprising means for determining whether a predetermined number of arrhythmia events are detected during a predetermined time interval prior to delivering the therapy at the first rate.

17. (Original) The device of claim 11, further comprising:

means for delivering the therapy at the first rate during a second time period different from the first time period;

means for monitoring the parameter in response to the therapy delivered at the first rate during the second time period to generate second parameter data;

means for determining whether the therapy was delivered for a predetermined portion of the second time period;

means for delivering the therapy at a second next rate during a second next time period not equal to the first next time period;

means for monitoring the parameter in response to the therapy delivered at the second next rate to generate second next parameter data;

Appl. No. 10/624/898
Reply to Office action of 10-11-2005
Page 8

means for determining whether the therapy was delivered for a predetermined portion of the second next time period; and

means for determining a metric corresponding to the first parameter data and the second parameter data to generate the first parameter metric, and to the next parameter data and the second next parameter data to generate the next parameter metric.

18. (Original) The device of claim 15, wherein the first parameter data and the next parameter data correspond to a weighted count of one of the number of arrhythmia events and the number of type of arrhythmia events.

19. (Original) The device of claim 11, further comprising:

means for determining whether the one of the first parameter metric and the next parameter metric corresponding to the one of the first rate and the next rate determined as an optimal therapy delivery rate is less than the other of the first parameter metric and the next parameter metric by a predetermined threshold;

means for setting the one of the first rate and the next rate determined as an optimal therapy delivery rate as a current therapy delivery rate only in response to the one of the first parameter metric and the next parameter metric being less than the other of the first parameter metric and the next parameter metric by the predetermined threshold.

Please **ADD** the following new claims:

20. (New) A method for controlling delivery of a therapy in an implantable medical device, comprising:

delivering a therapy at a first lower rate during a first time period;

monitoring an arrhythmia parameter in response to the therapy delivered at the first lower rate to generate first parameter data;

Appl. No. 10/824/898
Reply to Office action of 10-11-2005
Page 9

determining whether the therapy was delivered at the first lower rate for a predetermined portion of the first time period;

delivering the therapy at a next lower rate during a next time period;

monitoring the parameter in response to the therapy delivered at the next lower rate to generate next parameter data;

determining whether the therapy was delivered at the next lower rate for a predetermined portion of the next time period;

determining an arrhythmia metric corresponding to the first parameter data to generate a first parameter metric, and to the next parameter data to generate a next parameter metric;

determining one of the first lower rate and the next lower rate as an optimal lower rate in response to the first parameter metric and the next parameter metric; and

setting a permanent therapy delivery lower rate to the optimal lower rate.